PUBLIC HEALTH Bulletin

COUNTY OF ORANGE • HEALTH CARE AGENCY

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Antibiotic resistance a growing concern

Penicillin-resistant pneumococcus, methicillin-resistant *Staphylococcus aureus*, multi-drug resistant *Shigella*, and the recent report of several cases of fluoroquinolone-resistent gonorrhea in Orange County illustrate the increasingly serious problem of antibiotic resistance.

The Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), the California Medical Association, and the World Health Organization (WHO) have increased their efforts to promote the judicious use of antibiotics as part of a physician's routine clinical practice. The problem is not a new one, with bacterial resistance to drug therapy first discovered in the 1940's, following the introduction of penicillin. However, more types of bacteria have demonstrated resistance to newer and more powerful antibiotics, with resistance developing almost as soon as these drugs have reached the market. The CDC has estimated that one-third to one-half of all antibiotic prescriptions written by physicians are unnecessary.

While antibiotic resistance is a global health concern, health care practitioners can play an active role in helping to curb the problem by altering their patterns of prescribing antibiotics and educating patients about the problem. Reasons given by physicians for overprescribing antibiotics for respiratory tract infections include:

1) Diagnostic uncertainty (viral vs. bacterial)
2) Sociocultural and economic pressures (e.g., exclusion of child from day care unless on an antibiotic; avoiding the need for a return visit)
3) Malpractice litigation concerns (patients may not return if secondary bacterial infection occurs)
4) Meeting parent/patient expectations (may go elsewhere if not satisfied)

Studies done over the last 20 years have shown that:

1) Evidence for clinical efficacy is lacking; secondary bacterial infections are not minimized or aborted
2) Patients receiving antibiotics have no difference in rate of return visits
3) Overuse of antibiotics encourages bacterial resistance and increases medical care costs
4) Antibiotic side effects can occur and may be serious

Strategies for reducing the risk of antibiotic resistance include:

- Avoiding unnecessary antibiotic use for viral infections
- Choosing narrow over broad-spectrum antibiotics. Save the newer, broad-spectrum drugs for infections that resist the older drugs
- Switching to a narrow-spectrum antibiotic once a specific pathogen has been identified
- Washing hands between each patient visit
- Educating patients about the risks of antibiotic resistance (see insert for patient education information)
- Making sure that all patients have the appropriate immunizations

Many tools are available to assist in patient education on the dangers of antibiotic resistance. *Appendix 1* to this article, found on Page 3, is a self-scoring evaluation that assists patients in identifying their attitudes and opinions regarding antibiotic use. *Appendix 2* includes patient information on appropriate antibiotic use. A "Prescription Pad" created by CDC with

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This Issue . . .

"Save The Date" for HIV/AIDS Conference

The 14th annual HIV/AIDS **On The Front Line Conference** is scheduled for Wednesday, April 18 from 8 a.m.-5 p.m. at the Hilton Hotel, Costa Mesa. The clinical update for physicians, nurses and pharmacists will include presentations by Jay Levy, M.D., of U.C. San Francisco; Kathleen Squires, M.D., of Los Angeles County-USC Medical Center; Daniel R. Kuritzkes, M.D., Associate Professor of Medicine, University of Colorado Health Sciences Center; and Glen Treisman, M.D., Ph.D., Johns Hopkins University. County of Orange Health Officer Mark Horton, M.D., will welcome the conference attendees and introduce the featured presenters.

Breakout sessions will be offered for physicians, nurses and pharmacists and lunch is included in the cost of the program. In addition to continuing education units for physicians, nurses and pharmacists, certificates of completion will be available to participants from other professional disciplines.

Conference and registration information is available at:

www.hivconference.org

or by calling Molly McMahon at (714) 456-2249. The conference is presented by the Pacific AIDS Education and Training Center at UC Irvine and the County of Orange Health Care Agency.

Hypertension and Diet

A recent report in the New England Journal of Medicine confirmed the effectiveness of the DASH diet (Dietary Approaches to Stop Hypertension) and presented new data confirming the additional benefit of a low sodium diet in lowering blood pressure. This is very exciting news for both public health and health care professionals concerned about the profound and broad reaching effects of high blood pressure in our population.

In Orange County, as elsewhere, one in seven adults has high blood pressure and is at increased risk for stroke and cardiovascular disease. The recent NEJM article demonstrates that a diet low in sodium and fat, and rich in fruits and vegetables not only lowers blood pressure in individuals with hypertension, but also in those with normal blood pressure. The implication is inescapable: a low sodium DASH-style diet should not only be a part of the standard treatment regimen for hypertension, but should be adopted by all of us as part of a healthful and preventative lifestyle. It is said well in the NEJM editorial accompanying the article: "The widespread adoption by all persons, with or without hypertension, of sound dietary guidelines, such as those of the American Heart Association, should result in improved control and prevention of hypertension, as well as broad improvement in the other measures of health."

This confirmation of the effectiveness of dietary manipulation in preventing and treating high blood pressure has broader implications. First, it broadens the public health nutrition agenda. We can now add hypertension (and its consequences), to the list of conditions clearly preventable with nutritional lifestyle changes. This list is long and includes cancer, cardiovascular disease, obesity and diabetes as well as diarrheal diseases, sudden infant death and the many other health conditions prevented by breastfeeding.

Second, it refocuses our attention on nutrition as a fundamental and key component of a healthy lifestyle leading to improved health outcomes for individuals and populations. As with tobacco and exercise, research continues to clarify the benefits of a healthful diet and refine the nutritional recommendations that need to be part of public health programs promoting that healthy lifestyle. Further, the benefits of refraining from smoking, from appropriate exercise, and from good nutrition are synergistic and mutually reinforcing. Each high-risk behavior can lead to more than one health condition, and each health condition is the result of more than one high-risk behavior.

The implications for how we design and implement our health programs are obvious. While continuing to research and refine the strategies to address individual high-risk behaviors such as smoking, inactivity and poor nutrition, we should further explore opportunities to weave health messages together into an integrated set of recommendations that can serve as the foundation of a healthful lifestyle for all.

Meanwhile, remember, to prevent high blood pressure and its consequences, practice and preach the following: maintain a diet low in fat and salt with lots of fruits and vegetables, and exercise regularly.

Mark Horton, MD, MSPH, is Deputy Agency Director and Public Health Officer of the County of Orange Health Care Agency

West Nile Virus added to disease surveillance

The annual statewide surveillance program for mosquito-borne encephalitis resumes each May and runs through October. Last year, California added West Nile Virus (WNV) infection to the annual surveillance for Saint Louis Encephalitis (SLE) and Western Equine Encephalitis (WEE). The surveillance consists of testing (primarily serologic) of patients with signs and symptoms of viral encephalitis, meningoencephalitis or meningitis; serological monitoring of chicken flocks; testing mosquito pools; testing of suspect equine cases of encephalitis; and testing of dead crows. Human cases are sometimes the first warning of an epidemic threat, particularly for SLE. Experience with WNV in the Northeastern United States indicates that human cases occurred after WNV-infected dead birds were identified.

Orange County Public Health can assist in the rapid diagnosis of SLE and WEE by providing, free of charge, an IgM test of acute serum. We can also confirm positive serologic results obtained elsewhere. Additional testing would be performed on patient specimens if the initial WNV antibody test was positive. To submit a specimen, please contact the Orange County Public Health Laboratory at (714) 834-8385.

WNV background and update

Prior to 1999, WNV had never been identified in North America. The virus was first recognized in 1937 and is named for the West Nile District of Uganda where the first known case occurred. The virus has been found in the Middle East, other areas of Africa and, more recently, in Europe. WNV is a member of the Flavivirus genus, which includes the SLE and Japanese encephalitis viruses. The most common presentation of WNV in humans is an influenza-like illness with one or more non-specific symptoms such as headache, rash, conjunctivitis, or fatigue. Aseptic meningitis or encephalitis occur less frequently in other parts of the world, although the predominant feature of cases in the 1999 outbreak in New York City (NYC) was encephalitis. A high proportion of those cases also had profound muscle weakness.

The first outbreak of WNV in 1999 caused 62 documented cases, 7 of whom died. Most of the cases occurred in NYC. The outbreak of human cases was first reported by an observant infectious disease physician who noticed that an increased number of cerebrospinal fluid (CSF) specimens had been sent to the hospital laboratory over a 1-2 week period and many of the patients had an unusual pattern of muscle weakness. No cases occurred in NYC in 1999 after mosquito-control activities were conducted and public education regarding risk reduction was provided. A serologic survey in Queens, New York, in October 1999, estimated that there were 4 subclinically infected persons for each symptomatic person. The most common symptoms included fever, myalgia, headache, fatigue and arthralgia. It has been estimated that severe neurologic illness occurs in <1% of infected persons.

WNV detected in mosquitoes, sentinel chicken flocks, and/or wild birds spread from 4 states in 1999 to an additional 8 states and Washington, D.C., in 2000. Last year, 18 cases of severe neurologic illness were reported (14 from New York, 4 from New Jersey). Onset dates ranged from July 20 to September 13, with the mean age of patients 62 years (range 36-87 years). Of the reported cases, 1 patient died and 1 remained in a persistent vegetative state.

Spread of WNV is expected and could occur through migration of birds, travel by infected humans, or transporting of infected wildlife or domestic animals.

Preventive measures

Preventive actions can be taken if cases are identified or increased viral activity is suspected. These consist of targeted mosquito control activities and recommendations to the public to eliminate standing water, fix broken screens, avoid outdoor activity at dawn and dusk, use mosquito repellent, and, in the event of a full blown epidemic, cancellation of public activities at high-risk times.

Reporting

WNV, SLE and WEE are reportable conditions under Title 17 of the California Code of Regulations, Section 2500. To report a case or for questions regarding this communication, please call Communicable Disease Control and Epidemiology at (714) 834-8180.

Antibiotic Resistance—Appendix 1: Antibiotic-Use Screening Evaluation for Patients

Behavior	Behavior Frequency and Scores (Percentage of Occasions or Opportunities)					
	Always or Almost Always (95%-100%	Most of the Time (80%-94%)	Very Often (35%-89%)	Sometimes (6%-34%)	Rarely (1%-5%)	Never (0%)
How often have you (or how often have you on behalf of a dependent)						
1. Asked for and accepted a new antibiotic prescription based on your telephone report of symptoms without ever seeing a doctor?	50	40	30	29	10	0
2. Pressured the doctor for an antibiotic when he or she thought it to be unnecessary?	100	80	60	30	20	0
3. Asked for a specific antibiotic?	50	40	30	20	10	0
4. Resisted having a laboratory test whose main purpose was to help determine the need for an antibiotic?	50	40	30	20	10	0
5. Thought that the antibiotic prescribed for you (or for a dependent) was harmless?	25	20	15	10	5	0
6. Considered changing doctors or getting a second opinion because of a refusal to prescribe an antibiotic?	100	80	60	40	20	0
7. Taken (or administered to a dependent) less than the full prescription of an antibiotic because of inconvenience or resolution of symptoms?	50	40	30	20	10	0
8. Saved unused antibiotics for possible future use?	50	40	30	20	10	0
9. Self-medicated (or treated a dependent) with unused or otherwise available antibiotics for fever or other symptoms of infection, or shared them with family or friends, without a doctor's direction to do so?	100	80	60	40	20	0
10. Favored an expensive over a cheap antibiotic thinking that it should work better?	25	20	15	10	5	0
Scoring system:	0-50 Excellent	55-120 Good	125-200 Fair	205-300 Poor	305-455 Bad	460-600 Awful

Source: Lettau LA. Antibiotic-Use Screening Evaluations. Infection Control and Hospital Epidemiology 2000; 21:796-799.

Antibiotic resistance

(Continued from Page 1)

information on treatment of viral illnesses, is found on Page 4.

Resources for physicians

Strategies to combat antibiotic resistance developed at the 1999 Summit on Antimicrobial Resistance, hosted by the Alliance for the Prudent Use of Antibiotics can be found at http://www.healthsci.tufts.edu/apua/Practitioners/healthcare.html. The site also offers access to guidelines for treatment of otitis media and urinary tract infections, as well as access to educational materials.

Antibiotic Utilization Guidelines:

http://www.intmed.mcw.edu/AntibioticGuide.html

This site includes:

1. Antimicrobial Agents, Costs, and Indications
2. Treatment Recommendations for Common Infections
3. Recommendations for Surgical Prophylaxis
4. AHA Endocarditis Prophylaxis Guidelines

Centers for Disease Control and Prevention

http://www.cdc.gov/ncidod/dbmd/antibioticresistance/default.htm

Antibiotic Resistance—Appendix 2: Advising patients on ways to reduce the threat of antibiotic resistance

Tips for Patients

- Don't insist on antibiotics for yourself or your children. Talk with your doctor about the risks and benefits of antibiotics and which antibiotic is appropriate for your problem.
- Remember, most colds, coughs, sore throats, and runny noses are caused by viruses, not by bacteria. Antibiotics only work against bacteria.
- Don't use antibiotics remaining from old prescriptions without a doctor's instruction. Never share antibiotics with family or friends.
- Wash hands thoroughly and often and teach your children to do the same. Prevent illnesses by eliminating resistant bacteria that may spread to others.
- Make sure your immunizations and your children's immunizations are up-to-date. Immunizations prevent disease. The elderly and those with chronic illnesses, in particular, should seek vaccination against influenza and pneumonia.
- If you are prescribed antibiotics, finish the prescription, even if you feel better. If you don't, some partly resistant bacteria may remain and multiply. The infection may return a few weeks later, but a different—probably stronger drug—must be used to treat it and you may have contributed to the drug-resistance bacteria problem.
- Wash fruits and vegetables thoroughly. Avoid raw eggs and undercooked meats, especially ground meats.

Antibiotic Resistance—Appendix 3: Viral Prescription Pad

This "Prescription Pad" was developed by the Centers for Disease Control and Prevention (CDC) to explain to patients with a viral illness why they are not receiving an antibiotic and to recommend symptom relief for viral illnesses. The Prescription Pad is available on the CDC website at: www.cdc.gov/ncidod/dbmd/antibioticresistance/files/ViralPrescriptionPad.pdf.

Name: _____ **Date:** ___/___/___

Diagnosis: Cold or Flu Middle ear fluid (Otitis Media with Effusion, OME)
Cough Viral sore throat
Other: _____

Rx

You have been diagnosed as having an illness caused by a virus. **Antibiotic treatment does not cure viral infections.** If given when not needed, antibiotics can be harmful. The treatments prescribed below will help you feel better while your body's own defenses are defeating the virus.

General instructions:

Increase fluids.
Use cool mist vaporizer or saline nasal spray to relieve congestion.
Soothe throat with ice chips, or sore throat spray; lozenges for older children and adults.

Specific medicines:

Fever or aches: _____
Congestion: _____
Cough: _____
Ear pain: _____
_____: _____
_____: _____

Use medicines as directed by your doctor or the package instructions. Stop the medication when the symptoms get better.

Follow up:

If not improved in ___ days, if new symptoms occur, or if you have other concerns, please call or return to the office for a recheck.

Other: _____

CDC

Signed: _____

A guide for healthcare professionals on smoking cessation counseling

Implementing targeted interventions for smokers

By Mubula Naku, M.P.H., Healthsite Coordinator

Healthcare professionals are significant players in California's comprehensive public health campaign against tobacco use. Healthcare providers enhance other community efforts by counseling tobacco-using patients to quit, supporting tobacco control policies, and advocating tobacco-free community norms.

Tobacco control efforts have begun to show substantial results. California's lung and bronchial cancer incidence rates dropped 14% between 1988 and 1997, according to a study reported in December 2000 by the Centers for Disease Control and Prevention (CDC). Lung cancer incidence is especially relevant to tobacco control since tobacco use causes nearly 80% of lung cancer cases and most lung cancer patients die of their disease. Further good news came weeks later, published in *The New England Journal of Medicine*, California's aggressive antismoking campaign reduced heart disease deaths by 33,000 between 1988 and 1997. These recent findings show the continuing value of California's successful public health campaign against tobacco use—and the need for health care professionals' ongoing involvement.

Clinician Guidelines

Clinicians are in a frontline position to help patients by asking key questions about tobacco use, advising users to quit and reinforcing their reasons to stop. Healthcare providers are uniquely suited to assist patients with tobacco cessation in significant ways:

- Building patient motivation
- Helping with problem solving and other social support
- Prescribing or recommending adequate and individualized treatment

Every clinician should identify and effectively intervene with patients who use tobacco. The United States Public Health Service (USPHS) recently published clinician guidelines for treating tobacco use and dependence, developed by a multidisciplinary panel of tobacco cessation experts.

First, design a simple protocol to briefly address tobacco use as a health concern.

- Use this protocol during every patient's first visit and during subsequent visits if patients use or might start using tobacco (e.g., teens are at risk to begin tobacco use more than adults are)
- "Every patient" means every one age 5 and older and includes the accompanying parents or guardians of patients who are minors. This delivers the message to all tobacco users without trying to second-guess who uses tobacco

USPHS recommends the following strategies for your protocol:

For all patients

- **ASK** every patient about tobacco use and exposure to secondhand smoke (environmental tobacco smoke).
  Treat tobacco use as a vital sign. Implement an office-wide system to ask every patient at every visit about tobacco-use status.
- **ADVISE** tobacco-using patients to quit tobacco and commend patients who are tobacco-free.
  In a clear, strong and personalized manner, urge every tobacco user to quit.

Additional for tobacco-using patients

- **ASSESS** patient readiness to quit.
  Ask every tobacco user if he or she is willing to make a quit attempt at this time (e.g., within the next 30 days).
- **ASSIST** highly motivated patients in stopping.
  Ask every smoker if he or she is willing to make a quit attempt at this time. Help the patient with a quit plan.
- **ARRANGE** for pre-quit and post-quit date follow-up services.
  Schedule follow-up contacts, either in person or via telephone. Provide supplementary materials.

Clinical studies show that all five steps used routinely increase patient attempts to quit—and actual quit rates—more than when only two or three steps are used.

To promote successful and consistent implementation, secure administration and staff support. Stress benefits to patient health, the flexibility and simplicity of the intervention, and cost-effectiveness. Smoking cessation treatment is as cost-effective as other preventive interventions (e.g., hypertension treatment and mammography), and has been referred to as the "gold standard" of preventive interventions.

Implementing Target Intervention in Hospitals

Implementing tobacco cessation intervention strategies can be challenging. However, some of the most successful and rewarding programs are in hospital settings. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is developing standards requiring hospitals to have nonsmoking policies in place for patients, visitors, and staff. USPHS has provided the clinical practice guidelines discussed above. These and other community policies provide impetus to adopt recommended cessation intervention strategies:

- **Inpatient cessation programs.**
  Hospitalization presents a teaching opportunity, whether or not the diagnosis is tobacco related. Providers have a "captive audience" to listen to the quit message. After advising the patient to quit, offer a follow-up visit by a health educator or a nurse to help the patient set a quit date and provide support.
- **Patient tracking system.**
  Patients should have a tracking sheet in their charts. This should include tobacco use status, advice and treatment given, quit date, dates of follow up, referrals, and recommendations. Chart tags alert medical staff to patient smoking status as a cue to provide consistent quit messages.

Implementing Target Intervention in Worksites

Many companies now have on-site wellness programs, an ideal setting to host a tobacco cessation program. Tailor quit messages to the type of industry or trade, and create incentives (such as time off from the worksite) to encourage participation in a smoking cessation program.

Employers have a clear incentive to reduce employee health care costs and tobacco use cessation is cost-effective preventive care. Persuade reluctant managers to make smoking cessation a priority by focusing on the results: reduced healthcare costs, increased employee productivity and business profits, and decreased risk of liability.

Conclusion

Implementing a simple protocol using the recommended strategies (ASK, ADVISE, ASSESS, ASSIST, and ARRANGE) to briefly address tobacco use with every patient will yield increased quit rates. This short counseling sequence is an essential tool for healthcare providers to use in improving patient health.

Smoking cessation is cost-effective, especially in special populations such as hospitalized patients and pregnant women. For hospitalized patients, mentally ill clients, and young adults, successful tobacco-free living reduces general medical costs in the short term. For pregnant women, tobacco-free lifestyles result in fewer low birth weight babies, fewer perinatal deaths, fewer physical, cognitive, and behavioral problems during infancy and childhood, and also yields important health benefits for the mother.

For additional information, see *Treating Tobacco Use and Dependence*, published by the United States Public Health Service and available online at http://www.surgeongeneral.gov/tobacco/tobaqrg.htm.

ORANGE COUNTY REPORTED CASES OF SPECIFIED NOTIFIABLE DISEASES

Number of Cases by Year of Report

DISEASE	2000	1999	1998	1997
AIDS	325	304	305	283
AMEBIASIS	18	19	26	41
CAMPYLOBACTERIOSIS	314	246	284	403
CHLAMYDIA	4575	4893	3497	3290
CRYPTOSPORIDIOSIS	1	8	21	13
E-COLI O157:H7	30	11	11	6
FOOD POISONING OUTBREAKS	15	23	11	12
GIARDIASIS	216	231	272	321
GONOCOCCAL INFECTION	568	572	521	461
H-FLU, INVASIVE DISEASE	5	4	6	13
HANSEN'S DISEASE, LEPROSY	2	1	4	11
HEPATITIS A (acute)	245	267	228	348
HEPATITIS B (acute)	58	55	90	73
HEPATITIS B (chronic)	1780	1545	1692	1474
HEPATITIS C (acute)	4	13	10	0
HEPATITIS C (chronic)	2715	2477	1751	921
HEPATITIS OTHER/UNSPECIFIED	21	47	28	40
KAWASAKI DISEASE	17	18	16	19
LISTERIOSIS	13	9	12	12
MALARIA	15	13	16	18
MEASLES (RUBEOLA)	2	4	2	4
MENINGITIS, TOTAL	331	303	654	356
ASEPTIC MENINGITIS	262	238	586	275
MENINGOCOCCAL INFECTIONS	22	16	23	23
MUMPS	5	4	10	11
NON-GONOCOCCAL URETHRITIS	646	483	665	1014
PERTUSSIS	18	51	13	12
PELVIC INFLAMMATORY DISEASE	68	23	59	62
RUBELLA (1)	2	0	0	0
SALMONELLOSIS	353	309	334	551
SHIGELLOSIS	197	180	202	212
STREP, INVASIVE GROUP A	33	31	63	62
SYPHILIS, TOTAL*	215	236	178	198
PRIMARY	7	17	13	2
SECONDARY	21	18	11	5
EARLY LATENT	19	33	11	11
LATENT	5	5	0	9
LATE LATENT	152	157	135	150
CONGENITAL	10	4	8	19
NEUROLOGICAL	1	2	0	2
TUBERCULOSIS	246	246	298	330
TYPHOID FEVER, CASE	3	1	8	4

(1) Includes one congenital rubella case

County of Orange Health Care Agency

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